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Power Guide:
Mobile Mac

HIT THE ROAD, MAC

Whether you travel all the time or only occasionally, and whether you travel for business, pleasure, or both, chances are (if you're reading *Macworld*) you bring a little tech with you wherever you go.

But if you ask 20 different Mac users what they take on the road, you'll get at least 21 different answers. (Some of us have "heavy" and "light" packing lists, for example.) As with so many things Mac, these decisions are as individual as the icons on our desktops or the bookmarks in our browsers. Some of us cram everything we can into our carry-ons. Others do everything possible to shave off each extraneous ounce.

Whatever your packing style, though, there are probably a few things you can do to make your travels easier and safer. So we asked our experts—editors, writers, and (most important) readers—for their favorite tips. From what to bring (and what not to bring) to getting online and retrieving e-mail, here are the best.

PHOTOGRAPHY BY PETER BELANGER

WHAT TO CARRY

Use All Your Gadgets If you're like most modern business travelers, your carry-on holds your laptop and a cell phone, a smart-phone, or a PDA. So why burn up your laptop's battery charge when you can use one of the smaller devices to do some useful work—managing contacts and calendars, maintaining to-do lists, or making notes for a presentation? With these mundane chores assigned to your lesser gadgets, you can save your PowerBook's battery for more-important tasks (such as watching the first season of *Arrested Development* on DVD).—CHRISTOPHER BREEN

Date Your Batteries Frequent flyers know that you need a second laptop battery on cross-country flights. But batteries lose capacity as they age, so it's all too easy to swap in what you think is a fresh, new battery and then discover (at the worst possible time) that it's really old and weak. The cure? Label your batteries with a purchase date. And if you have an iBook or a 12-inch PowerBook, remember to shut it down (or make sure it's plugged into an AC power source) before you change bat-

teries; unlike the larger PowerBooks, those Macs can't withstand having their batteries removed for even an instant.—ADAM C. ENGST

Plug In on the Plane There's an alternative to lugging along a second battery on long flights—booking a seat with an AC outlet. Such powered seats are turning up more frequently on newer planes, par-
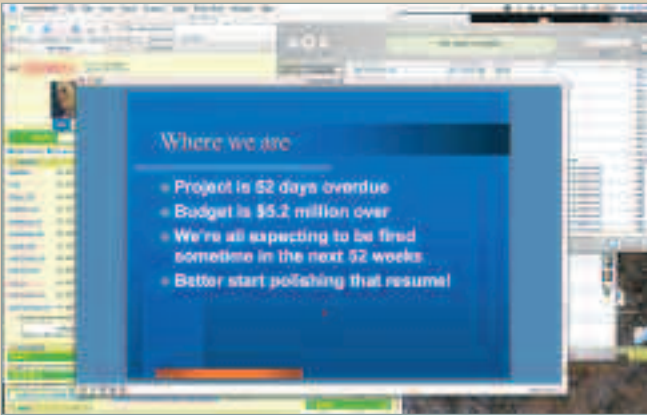
Back Up Your Presentation Don't take chances with your PowerPoint or Keynote presentations: create backup copies of your slides and put them on your iPod or digital camera just in case.

ticularly in first and business class. But how can you tell whether your seat will be powered? Before you select a seat, find out what sort of plane you'll be on, and then check SeatGuru (www.seatguru.com). It provides layouts of all the planes flown by the major airlines, showing which seats are powered (as well as which ones have limited legroom, and so on).—IAIN DRUMMOND

Back Up Your Slides You're on your way to a make-or-break presentation, but somehow (clumsy security, clumsy cabbie, or clumsy you) the Power-Book holding all your slides and notes gets irreparably damaged. But if you're smart, you can use the backup copy of your presentation that you put on your digital camera or iPod photo. How? First, you need to convert your slides into JPEG image files that your iPod or camera can work with. (There are a few ways to do this: PowerPoint can save directly to JPEG; Keynote 2 has an Export command that lets you save slides as JPEGs.) If you're using an iPod photo, your next step is to upload the images with iTunes. (Note that iPod photo users can make this process a bit easier by using the iPresent It utility [www.zapptek.com/ipresent-it], which will create slide shows from either Keynote or PowerPoint files and automatically set iTunes up to sync them.) If you're using a digital camera, name the files using your camera's usual file-name conventions and numbers that

All That You Can Leave Behind

You're on the road and carrying around way too much stuff: we've all been there, but we'd rather not go back. Here's a list of the extraneous things many of us take on business trips—and the weight-saving things we could take along instead.—DORI SMITH

INSTEAD OF THIS:	BRING THIS:
iPOD DOCK	A regular FireWire cable (which has a multitude of uses) and a SendStation PocketDock, which turns that cable into an iPod docking cable ($19; find.macworld.com/0330).
FIREWIRE CAR CHARGER FOR YOUR iPOD	The Griffin PowerPod, which—along with a FireWire cable and a PocketDock—will recharge your iPod in the car ($25; find.macworld.com/0331).
USB CABLE FOR YOUR DIGITAL CAMERA	If you have a 15- or 17-inch PowerBook, get a PC Card adapter for whatever media your digital camera uses. They can be had from multiple vendors for less than $10.
ETHERNET CROSSOVER CABLE	A regular Ethernet cable: all newer Macs can handle the crossover internally.
PRESENTATION REMOTE CONTROL	If you've got a Bluetooth cell phone, get a copy of Salling Clicker. This utility turns your phone into a presentation remote ($20; http://clicker.salling.com).
EXTERNAL HARD DRIVE FOR ON-THE-ROAD BACKUPS	Your iPod is a hard drive, too. In iTunes' iPod preference pane, select General and click on Enable Disk Use.
RJ-11 PHONE CABLE	An adapter that converts your Ethernet cable to RJ-11. Targus is just one of several vendors that make them ($20; find.macworld.com/0332).
CABLES THAT GET TANGLED UP	Zip-Linq retractable cord versions of the same cables; they do the same thing but take up much less room (www.ziplinq.com).

have already been used (IMG6523.jpg, for example). Next, use a USB media reader to copy the slides to your camera's media card via the Finder, put the card in the camera, and verify that you can view your images on the internal LCD screen. Finally, make sure to pack the cable that connects your camera or iPod photo to a television; most projectors should have the necessary composite video inputs.—ADAM C. ENGST

Pack a Short Cord Want to be voted Most Popular at your next conference? Bring along a very short (6- to 12-inch) extension cord. Here's how it works: You're in a session, and all the attendees want to plug their hulking power bricks into the one available power strip. But you just plug your power brick into your short extension cord and then plug the cord into the plug strip. That leaves more room for others.—DORI SMITH

Carry Just the Cables You Need When you're packing your carry-on for a trip, put in only the cables you'll need on the plane. Put the rest in a plastic bag inside your checked luggage. That way, you won't have to pull out a rat's nest of cables when emptying your bags at the security checkpoint.—MARK DAVIS

Play iTunes on TV Want to play some music in your hotel room? You don't have to settle for the dinky speakers on your PowerBook or lug along a dedicated pair. Instead, just pack a minijack-to-RCA adapter. At the hotel, plug the minijack into your laptop's or iPod's headphones port, and plug the other end into the RCA jacks on the front of the TV. Most modern TV speakers sound pretty good.— DAVE EVERITT

Get a USB Phone Charger Lose some unnecessary tonnage by investing in a USB charger for your cell phone. Instead of relying on a heavy power brick, you can recharge your cell phone and PDA by plugging them into your PowerBook's USB ports. A number of companies, including Keyspan (www .keyspan.com) and Zip-Linq (www .ziplinq.com), sell them, for a variety of cell phones and PDAs (their prices range from $10 to $25).— ADAM C. ENGST

What's in Your Carry-On?

Adam C. Engst: I'm on the road an average of three days a month; I have 125,000 frequent-flyer miles. I'm currently using the Kensington SaddleBag: I like the option of using it as a backpack, and I love the little pocket for airline boarding passes.

WHAT'S INSIDE:
12-inch PowerBook
PowerBook power cord (the long one)
Extra PowerBook battery
Canon PowerShot S400
Motorola 120C cell phone (with the antenna broken off so it fits in my pocket)
Jabra earphones
Little bag containing iPod earbuds, Koss earphones, an iPod remote-control cable, and a pair of adapters (one for double-headed airline jacks and another that lets two people listen to the same iPod)
Two blank CD-Rs
DiskWarrior boot CD
Kensington FlyLight USB LED light
Kensington security lock (I've never actually used it—instead, I just never let my bag out of reach—but it's a good thing to have on hand)
Cables (camera to USB, camera to TV, FireWire, Ethernet, and RJ-11)
Adapters: mini-DVI to DVI, and mini-DVI to VGA (for connecting to projectors and other monitors)
Handeze gloves (In case I need to do a lot of typing while traveling)
Antibacterial hand gel (essential at any conference where you'll shake hands with lots of people and then touch food)
Fairly large plastic bag (to act as backup rain protection)

GETTING ONLINE

Create a Room-to-Room Network If you're traveling with a group on a tight budget, ask your innkeeper to place all the travelers in adjoining rooms. The people in the room closest to the middle can then sign up (and pay) for broadband access. Using either an AirPort Express or OS X's Internet Sharing feature, everyone in the adjoining rooms can share that broadband connection. (Be sure to check with hotel management before you start surfing.)—CHRISTOPHER BREEN

Sign Up for AOL My wife and I have extensive international and domestic travel experience. We've tried all sorts of Internet connections, from cell phones to Wi-Fi networks. The only method we've found reliable worldwide is a bare-bones AOL dial-up account. For $4.95 a month, you get just five hours of connectivity, but that's enough time to grab e-mail and do some quick Web surfing. It has worked wherever we've gone, and we've gone over our time allotment only a few times.—HANS FISCHMANN 🖃

Find Your Mail Server If you want to send e-mail from your hotel, you'll probably need to give your e-mail client the name of the hotel's outgoing mail server. Unfortunately, hotel staffers often have no idea what it is. But (assuming you can get onto the

Where Am I? Need to find the name of your hotel's e-mail server? Use reverse-DNS lookup to find the domain name, and then add *mail* or *smtp* to it.

Web) you can figure out the mail server using a reverse DNS lookup. I use the aptly named Reverse DNS Lookup (http://remote.12dt.com/rns/), but there are plenty of other sites that do the same thing. When you go to Remote DNS Lookup, it'll show you your IP address. Simply click on the Submit button, and it'll tell you the domain name associated with that address. With that information, you can usually deduce the mail server. For example, if your IP address resolves to xxx.example.com, you can be pretty sure your mail server is mail.example.com. If that doesn't work, try smtp.example.com. One of them should work for any mail client unless access to the mail server requires authentication.—BART MELTZER 🖃

Laptop Gems

Most PowerBook and iBook users have the software basics covered—word processor, Web browser, e-mail client, and so on. But adding a few other cool bits of software can turn your portable Mac into a real powerhouse and make traveling a bit more comfortable and entertaining. Here are a few of our favorite laptop gems:

Raging Menace's $15 **SideTrack** (♦♦♦♦½; find.macworld.com/0333) transforms your humble trackpad into a supercharged input device. It lets you use the edges of the trackpad to scroll left, right, up, and down; designate alternative functions for clicking the button and tapping the trackpad; map different functions to the corners of the trackpad; and customize tracking speed and sensitivity far more than OS X's own preferences will let you.

Using gnufoo.org's free **uControl** (♦♦♦♦½; gnufoo.org/ucontrol/), you can swap your laptop's modifier keys around. So you can finally convert that seldom used enter key into a second option key. Or if you're left-handed, you can reverse the buttons on an external two-button mouse. But perhaps the most useful feature is the ability to enable mouse or trackpad scrolling so that pressing a user-defined modifier key (such as the fn key) lets you scroll through a document simply by moving the cursor.

As its name implies, Colin Henein's free **SlimBatteryMonitor** (♦♦♦♦; www.orange-carb.org/SBM/) takes up a lot less room in your menu bar than OS X's battery indicator. But its real power lies in its flexibility. You can set up SlimBatteryMonitor to show different information depending on whether your laptop is running off the battery, plugged in and charging, or fully charged.

For people who want to be able to find an open wireless (AirPort) network while on-the-go, but also think that a dedicated hardware detector (such as Canary Wireless's Digital Hotspotter) is overkill: **KisMac** (find .macworld.com/0334), **MacStumbler** (www.macstumbler.com), and **iStumbler** (www.istumbler.net) are free and will do the job using nothing more than your laptop's wireless card. The only drawback is that you have to open your PowerBook or iBook and turn it on—a hassle and a waste of battery if there are no networks nearby. MacStumbler and iStumbler have better interfaces and are easier to use; KisMac includes a number of features useful to network administrators but probably confusing for beginners.

Ever need to browse a Web site while traveling far from Net access? With a little foresight and HexCat's $7 **DeepVacuum** (♦♦♦½; www.hexcat .com), you can. DeepVacuum lets you download entire sites. Before you leave, you simply enter a site's URL, customize DeepVacuum's settings to determine how "deep" into the site it should search, and then click on the Start Download button. You'll have the site on your drive, accessible no matter how far you are from a phone line or a hotspot.

If you travel a lot, sometimes you need to keep yourself occupied on the plane or in your hotel room (and you can watch only so many DVDs). The solution? What travelers have been doing for centuries: playing cards. Semicolon Software's $25 **Solitaire Till Dawn X** (♦♦♦♦½; www.semicolon .com) provides 85 different kinds of Solitaire, as well as some of the best game play of any computer card game I've seen. Scenario Software's $30 **iPoker** (♦♦♦♦; www.scenario.com) offers more than 100 variations of poker, complete with animated opponents. An Analyze Hand feature helps you learn the game—perfect for "business" trips to Vegas.—DAN FRAKES

Switch to IMAP If you travel a lot and want to keep all your e-mail in sync, consider getting an IMAP e-mail account. The IMAP protocol automatically stores copies of all saved and sent messages on the mail server. It also tracks all changes you make to messages—marking them as read, replied to, deleted, and so on. You can then retrieve them from any computer in the world with an Internet connection, using either a Web interface or an e-mail client. IMAP is especially useful for people who prefer to travel without a laptop. .Mac subscriptions include IMAP access, and your ISP may offer it as an option. If not, you can find a list of IMAP providers at find.macworld.com/0324.—JOE KISSELL

Relay Your Mail Sending e-mail when you're on the road can be tricky. You may have to use the ISP that serves your hotel to get onto the Net, but your ISP's mail server may not accept messages sent through another's SMTP gateway. That's why many business travelers opt for Yahoo or other free accounts when they're traveling. But there's another way: Sign up for an SMTP relaying service from an outfit such as DynDNS.org or smtp.com. For a monthly fee (starting at around $10 per month, depending on message volume; relays are capped at several hundred a day to thwart spammers), your e-mails will be relayed through the service's gateway, and your recipients will never know you've left home.—CHRISTOPHER BREEN

Suction Cup DeepVacuum lets you download entire Web sites for offline viewing. You can even choose to download only movies, images, or music files.

What's in Your Carry-on?

Glenn Fleishman: I used to hit ten or twelve conferences a year, logging tens of thousands of air miles and thousands of car miles. Then I had a baby, so those days are (fortunately) over. Since July 2003, I've been to two or three conferences and have flown maybe 8,000 miles. But I still carry stuff around: I work in Wi-Fi hotspots and "third places" (away from home and office) several days a month for an hour or more a day.

WHAT'S INSIDE:
15-inch PowerBook

Canary Wireless Digital Hotspotter

Canon S1 IS camera

Sony Ericsson T616 phone (with Cingular 9600bps GSM service)

iPod

Targus CoolPad (to keep lap from scorching)

PC Guardian ComboLock (see "Lock but Verify")

**Cables** (Ethernet, RJ-11)

Adjust Your Headers Many of us use personal e-mail addresses when we're on the road. But to keep incoming business and personal e-mail separate, and to give your correspondence a professional look, you can make remotely sent messages appear to be from your work address (even if you're using a Web-mail service that won't let you mess with a message's From header). E-mail–redirection services such as Thinmail (www.thinmail.com) charge a small monthly or per-message fee to reroute e-mail. By adding a few special characters to the end of an e-mail address, you tell Thinmail to intercept the message and adjust the headers to reflect your desired From address.—JOE KISSELL

Fax through a Gateway If you have access to e-mail but not to a fax machine (or a phone line for your fax modem), you can still send and receive faxes—by using a gateway service such as jConnect, from j2 (www.j2.com). Receive-only accounts are free; full Premier accounts, which let you send faxes, make conference calls, and listen to voicemail toll-free, cost $15 per month. j2 assigns you a fax number (in the area code of your choice); faxes sent to this number are forwarded to you as e-mail attachments in TIFF or PDF format. To send a fax, you use a Web form or send an e-mail message (which can include attachments) to a special address.—JOE KISSELL
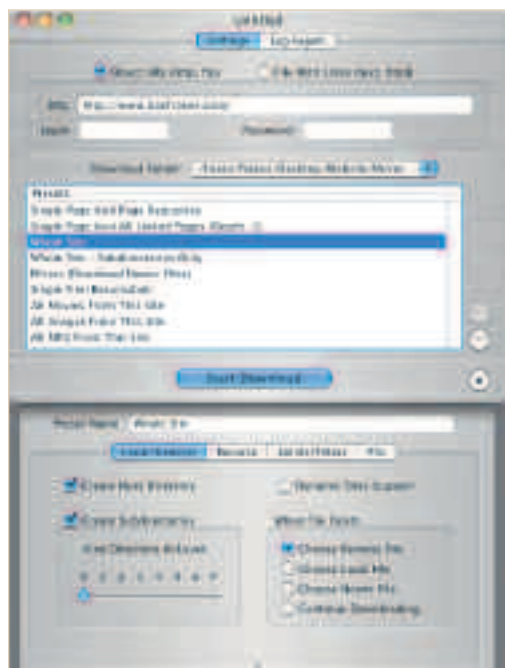
KEEP IT SAFE

Lock but Verify Most barrel locks—such as those made by Kensington, Kryptonite, and other makers of computer, bike, and general-purpose locks—can be easily picked with a ballpoint pen. Many combination locks for laptops can be opened with a thin piece of ordinary plastic. So what works? The only lock that Marc Weber Tobias (the expert behind Security.org who claims to be able to pick any combination or barrel laptop lock currently on the market) recommends is the PC Guardian ComboLock ($40; find.macworld.com/0323).—GLENN FLEISHMAN

Label Your Latop Once, at an airport security checkpoint, a pilot standing behind me almost took my iBook. He saw what looked like his laptop, grabbed it, and proceeded to walk away. Luckily, I was paying attention and asked him to look on the bottom of the notebook. He saw the label with my name on it and immediately apologized for the mix-up. Moral of the story: Your mother was right. Put your name on everything.—RICH CRUSE

Secure Your E-mail If you use a standard hotspot to send e-mail from the road, all your transmissions—messages, user names, and passwords—may be picked up by nearby snoopers. SSL-based e-mail—which encrypts your transmissions—is one good solution. But while most e-mail clients support SSL, not all ISPs support it. Enter FastMail (www.fastmail.fm). This Australia-based service offers free accounts that include secure Web mail. Customers can use SSL-based POP, IMAP, and SMTP to securely send and receive e-mail from any Mac e-mail client. Accounts cost $25 or $40; the $40 plan includes 2GB of storage and 3GB of monthly inbound and outbound e-mail. FastMail also offers self-service aliases, domain names, and spam handling.—GLENN FLEISHMAN

Buy Insurance Your homeowner's (or renter's) insurance may not cover your portable computer equipment against theft or damage while you're traveling. So you should consider purchasing a computer-specific policy from a company such as Safeware (www.safeware.com). A $10,000 policy, for example, costs $200 per year, with a $200 deductible. It covers accidental damage, theft (even, under certain circumstances, from an unattended vehicle), vandalism, and other losses, and provides the full replacement cost of both your hardware and software.—JOE KISSELL

Let OS X Protect OS X has several built-in features that can safeguard your laptop data. In the

What's in Your Carry-On?

Dori Smith: I travel about three days a month; I have about 40,000 frequent-flyer miles (I just redeemed a bunch for trips to Hawaii and Florida). I have two travel kits: the light bag and the heavy bag. The light bag goes everywhere (as you might guess), while the heavy bag comes along only on longer trips or trips where I'm going to need more hard-core tech gear.

WHAT'S IN THE LIGHT BAG:
15-inch PowerBook (and power brick)
Sony Ericsson T610 phone (and USB charger)
iPod (40GB)
Green-beam laser pointer
SendStation PocketDock
Griffin PowerPod
iSight
Jabra BT200 headset and power brick
Targus Ultra Mini Retractable Optical Mouse
Targus USB Retractable Notebook Light
Macally 128MB flash drive
Keyspan 4-port USB minihub
AirPort Express
2 Dimple Gel wrist rests (See find.macworld.com/0335.)
Discgear Discus 22-disc carrier
Cables (FireWire, Ethernet, and two extension power cords)
Adapters (CompactFlash PC Card, iPod cassette, 3-to-1 AC [with surge protector], DVI-to-VGA dongle)

WHAT'S IN THE HEAVY BAG:
All of the light bag's contents
Citizen PN50 printer (and cables and power brick)
Garmin GPS
Tungsten T PalmPilot (with cradle)
Canon Powershot S300 Digital Elph camera (and charger)
Griffin iTalk
RJ-11 cable
S-Video-to-composite adapter

Security preference pane, select the Require Password To Wake This Computer From Sleep Or Screen Saver option; if your computer is stolen while it's asleep, the thieves won't be able to see your data without your password. Also select the Disable Automatic Login option, so merely restarting your computer won't automatically enter your password. Finally, to prevent anyone from booting your laptop from another volume (such as a CD), launch Open Firmware Password (in /Applications/Utilities) and set a machine-level password.—JOE KISSELL

Encrypt Your Files Panther's FileVault can keep your files safe by encrypting your Home folder. But like any other files, its disk images are prone to damage that may render all your data unusable. A safer alternative is to

create your own encrypted volumes and use them to store your sensitive files. Apple's Disk Utility can make encrypted disk images, but PGP Disk ($59 as part of PGP Personal Desktop; www.pgp.com), offers stronger encryption and more configuration options. It also lets you encrypt e-mail messages.—JOE KISSELL

Laptop Cases for the True Road Warrior

Everyone needs a laptop bag, but some people need a laptop *case,* the kind that protects not only against scuffs and scratches, but also against bumps, bruises, dents, and drops. For these users, a heavy-duty enclosure is in order. These three packs will protect your precious PowerBook or iBook throughout the roughest of trips.

Ballistic Briefcase At first glance, passers-by might think you're carrying national security secrets in Matias's slick and stylish Laptop Armor ($150 to $180; find.macworld.com/0326). Only you need know it's just your precious Power-Book. The Laptop Armor has a rigid aluminum outer shell and padded inserts that fit any laptop; the company claims that the case can help your laptop survive a 10-foot drop onto concrete, so it should have no problem with everyday abuse. Interior pockets hold a power adapter, a PDA, a mobile phone, and a few files, and a padded shoulder strap gives your hand a rest. The sturdy latches are lockable for additional security. The Laptop Armor is available in aluminum, black, and white. (Secret-agent handcuffs not included.)

Armor Plating For people who need the ultimate in crush-proof protection and who don't care about pockets for PDAs and pens, RadTech's MacTruck ($200 to $230; find.macworld.com/0328) is made of thick aluminum-alloy plates that won't bend, let alone break. In fact, the MacTruck isn't so much a case as an exoskeleton: You leave your PowerBook in the MacTruck during use—it gives you full access to all ports, its air channels allow for cooling, and thick pads keep your laptop safe and stable. RadTech claims that the MacTruck is sturdy enough to protect your PowerBook from being run over by a truck—hence the case's name. However, this heavy-duty protection is also just plain heavy—the case alone weighs between four and six pounds, depending on the size.

Bike-Safe Backpack If you'd rather wear your laptop on your back, Axio's Urban ($150; find.macworld.com/0329) could be the bag for you. It features a rigid polycarbonate outer shell and lots of padding—you never want to take a spill off your bike or motorcycle, but in case you do, the Urban is like a helmet for your other brain. Interior compartments hold PDAs, an iPod, and other gadgets, and an optional Tek-Pack attaches to the outside of the Urban to accessibly store smaller items or a hydration pack. The Urban is available in titanium silver, metallic gray, and metallic olive.—DAN FRAKES

Case Closed The Matias Laptop Armor (left), the RadTech MacTruck (below), and the Axio Urban (above) provide heavy-duty protection for your PowerBook or iBook.
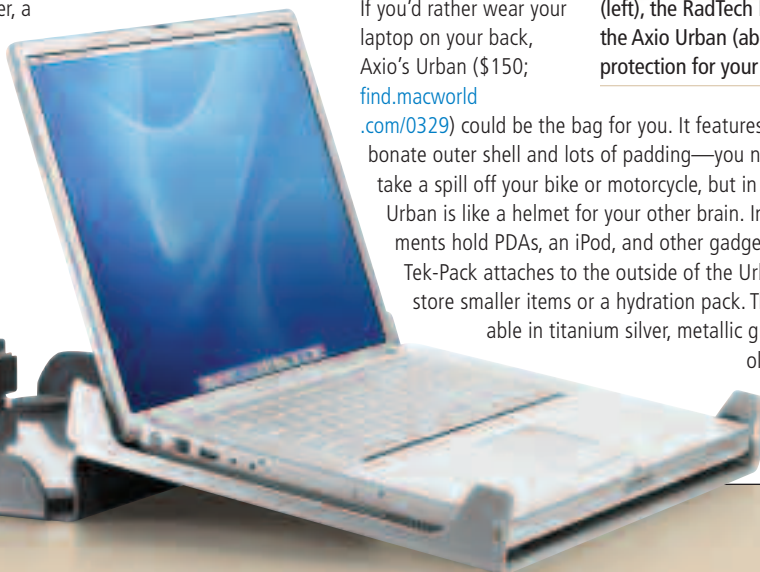
How to Use Hotspots

You'd have to be living far, far away from a Starbucks not to know that Wi-Fi hotspots are everywhere these days. Since we last looked ("Hop on a Hotspot," *Mobile Mac,* March 2004), thousands of new hotspots have come online. Just about every U.S. metropolis is now a wireless hot zone. Even the smallest burgs seem to have one or two hotspots—sometimes down at the local Dairy Queen.

But using those hotspots to get online isn't always easy. Some spots are free, some charge a fee, and the choice between the two isn't as obvious as the pricing might make you think. And then there's the whole issue of how to use a hotspot without letting that guy in the corner snoop through your e-mail messages with his handy wireless packet sniffer.

Find Your Spot

Your first option for finding a hotspot is to guess. These days, you're likely to find free Wi-Fi just by strolling down the street with your laptop and periodically checking for available networks with free software (such as Alf Watt's iStumbler; www .istumbler.net). Here are some likely bets:

> Coffee shops and restaurants: Starbucks isn't the only national chain offering Wi-Fi. Schlotzsky's Deli, for example, provides wireless access in its company-owned stores. And Panera Bread has opened hotspots in several hundred of its bakeries nationwide; it plans to eventually turn all its shops into free hotspots.

> Libraries and universities: In locales ranging from tiny towns in Colorado to sprawling metropolises like Los Angeles and Seattle, an increasing number of public libraries now offer free Wi-Fi in every branch. Many universities—such as Case Western Reserve University in Cleveland—have added guest access to their wireless networks. (Check the guest policy in advance: some organizations require that
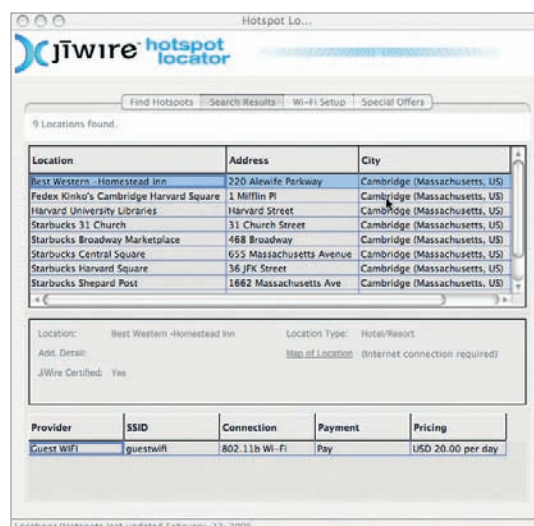
Hotspot Finder JiWire's downloadable, OS X–compatible locator will find the nearest hotspot—and you don't have to be online.

you have some sort of affiliation, or that a patron or a staff member vouch for you; others require a library-card number or an academic ID for access.)

> City streets: Several cities—including but by no means limited to New York; San Jose, California; and Portland, Oregon—now offer free wireless access in downtown areas and public parks or squares.

If you'd rather not rely on the hit-or-miss method, there are several good online directories, such as the Wi-Fi-FreeSpot Directory (www.wififreespot .com), WiFinder (www.wifinder.com), and the Wi-Fi Zone Finder (www.wi-fizone.org).

But such directories won't do you much good if you can't get online. JiWire (macworld.com/0478) now offers the only downloadable OS X–compatible directory, and it's updated monthly (see "Hotspot Finder"). The company also provides the underlying technology for the hotspot locators used by Intel.com, USAToday.com, Yahoo, and many other sites. (Disclaimer: JiWire sells advertising for my Web site, Wi-Fi Net News [www.wifinetnews.com], and I write articles for its site.)

Mile-High Wi-Fi

Wi-Fi has sprouted in some pretty odd locations in the past year, including the Washington State Ferries (in the waiting areas and on board); several airlines (for example, on Scandinavian Airlines and Lufthansa, thanks to Connexion by Boeing); and the Hampton Jitney, a shuttle service that takes Long Island residents from the Hamptons to Manhattan (and vice versa).

The ferries use a complex antenna system to connect to Wi-Fi stations at ferry docks; the planes employ phased-array antennas pointed at satellites, which relay traffic to and from ground stations; and the Hampton Jitney relays network traffic via a cellular data network.

Pay for Play

If you travel regularly for business, free hotspots may not work for you. Constantly shuttling from airport to airport, hotel to hotel, and convention hall to meeting center doesn't leave much time for searching out the nearest wireless coffee shop.

It's true that many hotels now offer free broadband access. But all too many still charge guests a fee for the service. If you'd rather not pay $10 to $15 extra per night at the hotel, or $8 to $15 for a couple of hours of access at the airport, then consider a monthly service plan from a dedicated hotspot service.

While there has been a bit of a shakeout over the past couple of years, dozens of hotspot operators remain in the game in the United States. Only a few have networks big enough to provide truly useful nationwide coverage, but many offer no-fee roaming, which lets you use the same account name and password to access different networks.

T-Mobile and SBC are now the two largest hotspot operators in the United States. T-Mobile, the cellular company, has more than 5,400 wireless locations around the country, including Starbucks, Kinko's, and Borders stores, as well as some airports and hotels. SBC Communications has more than 6,000 hotspots in its basic network, including UPS Store, Mail Boxes Etc., and Barnes & Noble locations.

Both providers offer two plan types (see "How They Compare"): a monthly, all-you-can-surf service and a pay-as-you-go hourly or daily plan. These day passes allow unlimited access for 24 hours from the time you activate them and are good throughout the provider's entire network. Not surprisingly, you'll pay a higher rate for the short-term plans. (Other providers offer similar arrangements but rarely let you roam across an entire network for 24 hours.)

Just to make things trickier, SBC offers plans with and without roaming. Its own network includes locations that SBC operates directly; strangely enough, it also includes McDonald's restaurants. (Note that if you live on Big Macs while you're on the road, you can buy McDonald's-only service at $2.95 for two hours; see macworld.com/0477 for details.)

If you're an SBC customer, you can't currently use any hotspots on the T-Mobile network, and vice versa. But everyone in the Wi-Fi industry expects that to change in the near future.

In contrast to T-Mobile and SBC, which operate their own hotspots, Boingo doesn't own any hotspot equipment or locations itself. Instead, it gives you a piece of software that lets you connect at 16,000 locations (worldwide) belonging to dozens of networks, and you don't have to set up an account for each one. Boingo just released an OS X version of that software.

Hotspot Security

When you connect at a Wi-Fi hotspot, all the data you send and receive—every password, e-mail message, and Web page—moves entirely in the open over the network. Any other user on the same network can extract information about you with free and easy-to-use software. But you can take some simple steps to secure your data.

> Use SSL (Secure Sockets Layer) to send and receive e-mail. This will protect your password and the contents of your messages. Not every ISP offers SSL e-mail, but most corporate systems and all the popular OS X e-mail apps—Apple's Mail, Qualcomm's Eudora, Bare Bones Software's Mailsmith, and Microsoft Entourage—support it. To implement SSL in your particular client, check its Help menu. The dedicated mail service FastMail also offers SSL e-mail, as well as secure Web mail.

> Secure your Web browsing. Secure-Tunnel (www.secure-tunnel.com) offers an OS X–compatible service that, for $3 a month, lets you browse the Web through an encrypted tunnel to its servers. Note that you don't need this additional layer for already-secure pages.

> Employ a virtual private network (VPN), which encrypts all data traveling between your machine and a remote server. You can rent VPN service by the month from HotSpotVPN (www.hotspotvpn.com), or buy the Buffalo Secure Wireless Gateway ($160; macworld.com/0427), which lets you set up a VPN server on your own network.

Striking a Balance

It's always hard to pay for something you can get for free—but it's wise to remember that you get what you pay for. The paid sites offer reliability and easy availability, while the free sites offer the obvious bargain. But with the growth of unlimited monthly service plans that cap your expenses at in-network locations, there's no reason not to opt for both: use a free site when you can, and use a paid site when you have to. Combining the best of both worlds means you'll never have to worry about finding a connection. □

GLENN FLEISHMAN is the author of *Taking Control of Your Airport Network* (Peachpit Press, 2005) and a frequent contributor to *Macworld*.

HOW THEY COMPARE

SBC, T-Mobile, and Boingo are three of the biggest hotspot networks in the United States. Here's how they stack up in terms of price and availability.

SERVICE	LOCATIONS	DAILY FEES	MONTHLY FEES	URL
Boingo Wireless	16,000 (including airports, and SBC and Wayport locations [excluding McDonald's])	$7.95 for 24 hours	$21.95 (no cancellation penalty)	macworld.com/0410
SBC FreedomLink	6,000 (including UPS Store, Barnes & Noble, and McDonald's locations; airports; hotels; and smaller networks)	$8.33 for 24 hours (unlimited access at all locations; three-session minimum)	$19.95 for home network; $39.95 for home plus roaming (one-year commitment, $100 early-cancellation penalty)	macworld.com/0411
T-Mobile HotSpot	5,400 (including Starbucks, Kinko's, and Borders locations)	$9.99 for 24 hours (unlimited access at all locations) or $6.00 per hour (one-hour minimum)	$19.99 for subscribers to T-Mobile cellular service; $29.99 for nonsubscribers (one-year commitment; $200 early-cancellation penalty); $39.99 for a flat, no-commitment plan (no cancellation penalty)	macworld.com/0412

Stranger in a Strange LAN

You're in a client's office or a friend's house, and you have to get online. No problem: you just fire up your Mac, wait a couple of seconds while AirPort automatically finds any 802.11 networks within hailing distance, and, boom, you're online, right? Not necessarily.

If your host is using an AirPort Base Station, it often is that simple: your Mac will alert you to the presence of the network and then ask you for the password. But if it's a non-Apple network, getting on can be anything but simple.

Finding a Network

No matter what kind of wireless network you're trying to log on to, the general process is the same: find the network and then supply a key to log on.

If the network is open, and if you're using OS X 10.2 or later, that first step is simple: Your Mac may automatically alert you to the network and ask whether you want to join. If it doesn't, click on the AirPort icon on your menu bar and select the network you want to join. If there's an open network available, it should be on the list. (Or you can launch Internet Connect and click on the AirPort tab to select the network.)

Closed networks, however, won't make the list—you'll have to tell your Mac which network you want to join. To do so, get the network name from your host, click on the AirPort icon, and select Other from the drop-down menu. That'll call up the Closed Network dialog box, where you can fill in the name of the network.

Logging On to WEP

Once you've selected a network to log on to, OS X will find out whether it requires a password. If it doesn't, you can skip the rest of this article—but you might want to tell your host about the hazards of unsecured wireless networks, and you should definitely be careful about the kinds of data you transmit through the unprotected air.

If security is turned on, the AirPort dialog box will, by default, ask you for a WEP Password. But if you

Keys to the Corporation

Businesses often use more-sophisticated security protocols to protect their wireless (and even wired) networks. They come in a bewildering variety of acronyms—LEAP, EAP-TLS, MD5, and more. But most of these systems are compatible with one common standard known as IEEE 802.1X.
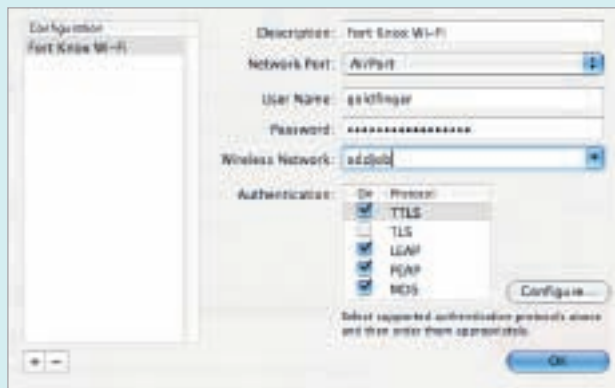

Maximum Security 802.1X—which OS X 10.3 supports—adds a new layer of security to wireless networks. It relies on authentication servers, which check your user name and password before letting you use the wireless network.

Unlike WEP and WPA, under which all users use the same keys to get onto a wireless network, 802.1X-based security systems provide individual keys for each user. Here's how it works: You log in to a wireless access point, using a user name and password. Before the access point will allow you to do anything, it checks with a server. If the server agrees that your user name and password are kosher, it'll issue an "accept" message to the access point, which will then let you in.

Apple added support for 802.1X in OS X 10.3. To use it, your host will have to give you a user name and a password. With those in hand, you launch Internet Connect and then select File: New 802.1X Connection. (If that option is grayed out, click on the 802.1X tab in the Internet Connect application.) Select Edit Configurations from the Configuration pop-up menu, and then click on the plus sign (+) in the lower left corner of the configuration window. Enter a description of the configuration in the Description field, choose AirPort from the Network Port pop-up menu, enter the user name and password in their respective fields, and then choose from the Wireless Network drop-down menu.

In the Authentication area, deselect all but the protocol your network host tells you is in use. If the network uses EAP-TLS, the network administrator will also have to give you a digital certificate, which can be installed via Keychain. Click on OK, and then click on Connect to start the connection. (For more on 802.1X, see "AirPort Protector," *Mac Beat,* page 20.)
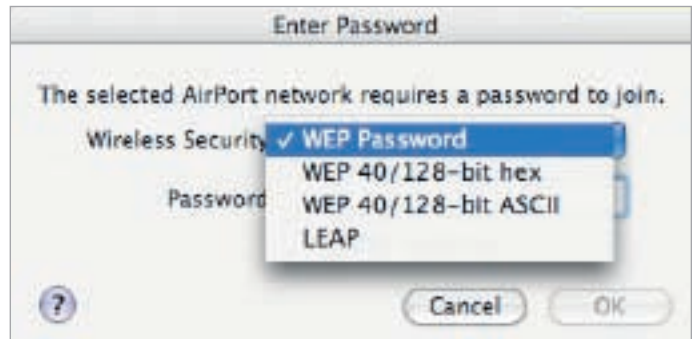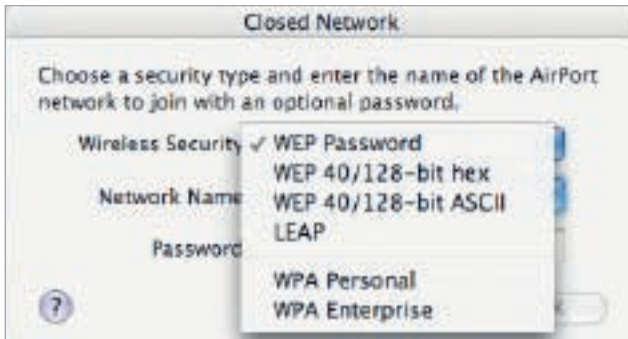
click on the Wireless Security drop-down box, you'll see at least three more options: WEP 40/128-bit hex, WEP 40/128-bit ASCII, and LEAP (see "Your Key, Please"). Figuring out which one to use is a process of trial and error.

Start by leaving the WEP Password option as is and entering the password you were given. If that doesn't work, take a look at the password.

If it's ten or 26 digits long—for example, *6F3A7201B8*—try selecting WEP 40/128-bit hex and giving the password another try. If the password is a five- or 13-character chunk of text—such as *frisk* or *h3ckzow3nzerd*—try WEP 40/128-bit ASCII instead.

Occasionally in OS X 10.2 (and always in older versions of OS X, as well as all versions of OS 8 and OS 9 that support AirPort), the only WEP option you'll be offered is WEP Password. In those cases, if you have any trouble logging in, try putting a dollar sign ($) in front of hexadecimal keys or surrounding ASCII keys with straight quotation marks—*"frisk"*.

Joining the WPA
Some Wi-Fi networks may offer two other security options: WPA Personal and WPA Enterprise. (For the lowdown on WEP versus WPA, see find .macworld.com/0288.) Unfortunately, only OS X 10.3 supports WPA; if you're using an earlier OS, you won't be able to log on.

OS X 10.3 is good about detecting when it needs a WPA password; but if it doesn't, if you've already tried the various WEP options with no luck, and if your host can't tell you what kind of security is in use, then try specifying WPA Personal from the Wireless Security drop-down menu. A WPA Personal key consists either of a combination of letters, numbers, spaces, and (some) punctuation marks, or an absurdly long (64-digit) sequence of hexidecimal code. (Jaguar and Panther can tell without prompting when it's the latter.)

As its name implies, WPA Enterprise is most common in large companies. It relies on a server that doles out a different key to each user. If your host hands you a login name and a password, select WPA Enterprise from the Wireless Security drop-down menu. If that doesn't work, try the LEAP option (see "Keys to the Corporation").

Troubleshooting
Whatever kind of key you're entering, type carefully: the characters are stealthed as you type, so it's easy to enter the key incorrectly.

In the Enter Password dialog box, you have the option of storing the password in the Keychain. Be careful—if you opt to store the key but then enter the wrong password, you'll have to go to Applications: Utilities: Keychain, find the network's entry, and delete it before trying again.

Easier Road Ahead
This could all get a lot easier in the future. The company that supplies Apple's Wi-Fi chips has recently introduced a system called SecureEasySetup, which lets network administrators generate and distribute strong WPA keys with the push of a button. Apple hasn't announced yet whether it'll sign on.

For the time being, you'll just have to rely on careful typing. □

GLENN FLEISHMAN is a coauthor of *Take Control of Your AirPort Network* (Peachpit Press, 2004) and a frequent contributor to *Macworld*.

Your Key, Please
OS X can't tell what kind of encryption a closed network uses, so it presents you with all the possible options (left). If you aren't running Panther, WPA won't be a choice (right).

ICON BY PAUL HOWALT

No Files Left Behind

It's a traveling professional's worst nightmare: you're on the road, it's the night before a major meeting, and you discover that you've left your slides and notes on your home or office Mac—or that you've left some vital phone numbers on a Stickies note on your Mac's desktop.

But fear not. Whether you need access to files or to your Mac's desktop, you can probably get both—using tools built right into OS X. And if those aren't enough, you've got a couple of good for-pay alternatives.

What You Need

To be accessed from afar, a remote Mac must meet a few basic requirements. First, it needs a full-time Internet connection. Second, it must be awake. You have many ways to arrange that: you can leave your system on and set it to stay awake the whole time you're gone, you can have someone back home wake it up, or you can use OS X's Energy Saver preference pane to set standard wake and sleep times each day. If you need more flexibility, try the free utility Wake550 (find.macworld.com/0262), which can wake your Mac remotely. (Note that this program may not work through firewalls and requires support for Wake-On-LAN in your home system—something many older models lack.)

The third prerequisite is that you know the remote machine's public IP address. The easiest way to find out is to use an IP-checking Web site, such as http://checkip.dyndns.org. Or you might want to register for a free dynamic domain name service through Dynamic Network Services' site (www.dyndns.org)—instead of remembering an obscure IP address, you could then use a plain-English host name.

Finally, if your machine uses a firewall, you'll need to make sure that certain ports are opened. That's easy if you're trying to access your machine at home, where you control the firewall. But if you're trying to access a machine at work, where your company's IT department sets the rules, it may be impossible. In that situation, you should check with your IT department to see whether it offers any official method of remote access, such as a virtual private network.

Access Your Files

With those conditions met, your next step depends on what kind of access you need and how concerned you are about security. OS X offers a number of ways to make your remote Mac's files accessible—including personal file sharing, Windows sharing, FTP access, and remote login.

The starting point for all these solutions is the same: the Services tab of the Sharing preference pane. You'll see a bunch of options for opening up your system to the outside world there; my preferred solution is Remote Login, because of its excellent security. The other options (Personal File Sharing, Windows Sharing, and FTP Access) all work fine but share one shortcoming: they don't encrypt your data transmissions.

Enabling Remote Login is as simple as clicking on the Remote Login check box. If you use the OS X firewall, you should also click on the Firewall tab and select the Remote Login – SSH (22) option. If you use a third-party firewall, use its software to make sure that port 22 is open.

When you enable Remote Login, you're actually enabling three tools built into OS X: a secure shell program (SSH) for logging in remotely via Terminal, a secure copy program (SCP) for copying files, and a secure FTP server (SFTP) that turns your remote Mac into a secure file server. The first two have their uses (particularly if you want to access remote systems from the command line), but most people need only SFTP.

Safe and Secure
Using Transmit and OS X's built-in secure FTP server, you can ensure that neither your password nor your data is intercepted by malicious hackers—all data is encrypted before transmission, ensuring that any prying eyes see only gibberish.
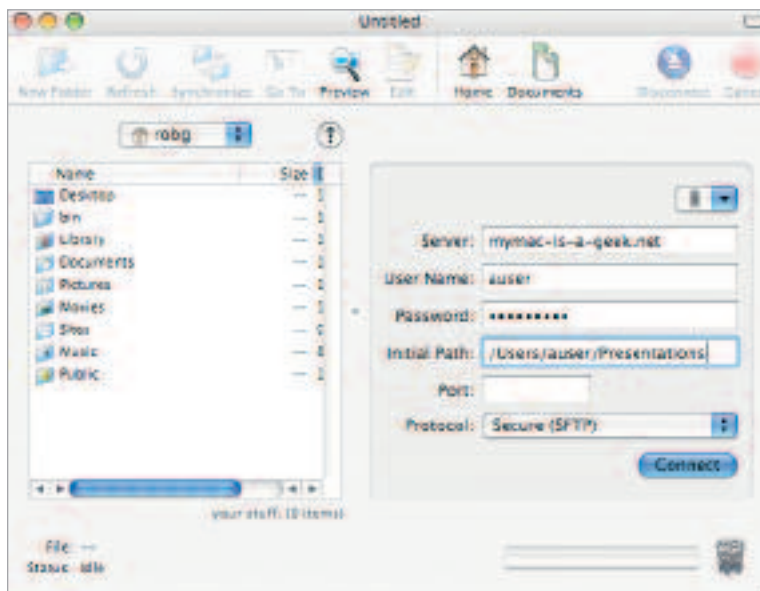
Secure FTP is just like regular FTP, except everything's encrypted. While you can use it from the command line—just type `sftp username@ 1.2.3.4` (where `username` is the short user name of someone on the remote Mac and `1.2.3.4` is that Mac's IP address), and then provide your password when asked—you don't have to. Instead, you can use one of the GUI applications that support SFTP, including Interarchy ($39; www.interarchy.com), Transmit ($25; www.panic .com/transmit), Cyberduck (free; http://cyberduck.ch), and Fugu (free; find.macworld.com/0263). With one of these apps, Secure FTP is just as easy to use as standard FTP but not nearly as risky (see "Safe and Secure").

Control the GUI
But perhaps you actually need to *use* your home computer—for example, to run Quicken so you can see your current portfolio balance, or to send an e-mail from your home SMTP server. In this case, you need VNC (Virtual Network Computing) software that lets you control your computer remotely.

OS X 10.3 includes a free VNC client called Apple Remote Desktop Client (you can also download it from find.macworld.com/0251). For this project to work, you must have version 2.1 of the client. You access Apple Remote Desktop through your System Preferences. If you want an application that you can run and quit as you wish, check out the freely available OSXvnc (www.redstonesoftware.com/vnc.html).

Assuming that you're using Apple's client, you can enable it by going back to the Services tab of the Sharing preference pane, selecting Apple Remote Desktop, and then clicking on Access Privileges. Enable the VNC Viewers May Control The Screen With Password option and create a password. Make sure that at least one user in the list at the top left of the dialog box has the On box selected, too—otherwise, you won't be able to connect. If you use the OS X firewall, click on the Firewall tab and select the
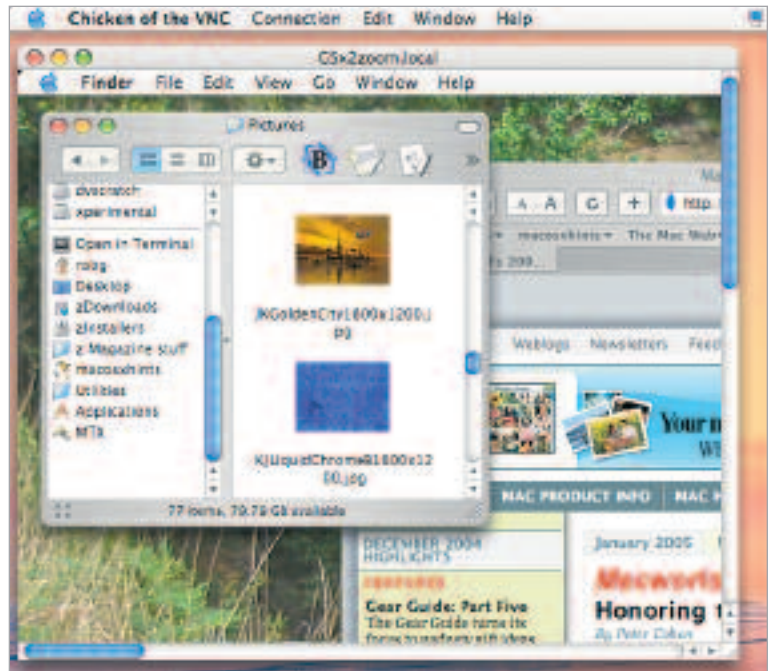
Apple Remote Desktop (5900, 3283) option. If you run your own firewall, open those same ports.

To connect to the machine you've just configured, you'll need a VNC viewer on your traveling Mac. The main one these days is Chicken of the VNC (free; find.macworld.com/0264). Launch Chicken of the VNC, enter your remote Mac's IP address and the password you created in the Host and Password boxes, and click on Connect. If everything works, you should now see your remote desktop displayed on your local Mac (see "Remote Control"). Keep in mind that you'll need a fast connection to make the most of this feature, since you're moving large amounts of data back and forth across the Net.

These free remote-control clients can't do everything. If you need to do more, you can look into Apple's full Remote Desktop application (see our review, page 28) and Netopia's Timbuktu Pro ($180; find.macworld.com/0265); both give you even more control over your homebound Mac. That control means sending and receiving files (both Remote Desktop and Timbuktu), creating QuickTime movies of the remote Mac's screen (Timbuktu), and installing software on networked machines (Remote Desktop).

Staying in Touch
Whether you need full remote control or just remote file access, with file-transfer and remote-control apps, there's no reason to worry about leaving important files behind. Plan ahead, and you can almost always find a way to get what you need, when you need it. □

Remote Control
Using Apple's built-in remote-control server and a viewer program such as Chicken of the VNC, you can take full GUI control of a remote Mac.

Contributing Editor ROB GRIFFITHS is the author of *Mac OS X Power Hound, Panther Edition* (O'Reilly, 2004) and runs the Mac OS X Hints Web site (www.macosxhints.com).

Windows File Sharing

Going on the road but don't want to bring along a laptop? You can still connect to your Mac at home from any convenient Mac, Linux, or Windows box—as long as you plan ahead. Again, it starts on the Services tab of the Sharing preference pane. There, you select the Windows Sharing option. You'll also need to make sure that Windows Sharing is selected on the Firewall tab, or that you've opened port 139 on your personal firewall. Then you can connect from a remote Windows box using the server address format *smb://1.2.3.4* (where *1.2.3.4* is your home Mac's IP address). Note that you can connect only to your Home folder and that your data transmissions won't be encrypted.

MOBILE MAC

Laptop ER

A carafe of water is accidentally dumped onto your PowerBook by a flight attendant, zapping it instantly. Or the airplane seat in front of you abruptly reclines, crushing your laptop's screen.

Those are just two of the indignities that can befall your laptop when you travel. (The first actually happened to mine; the second, to that of my wife's seatmate on a recent flight.) No matter how well you care for your PowerBook or iBook, laptops are all too vulnerable to slipping, dropping, skidding, and otherwise impacting terra firma in all sorts of undesirable ways.

So if something bad happens to your portable when you're on the road (or even at home), what's the next step? Can you fix it yourself? Or will you need to send the machine back to Apple for repair? And is the damage covered by AppleCare? While I'd certainly never wish any of these disasters on anyone, here's what to do if one of them strikes.

Drinks Are on You

According to laptop-repair specialists, spilled liquid is one of the most common calamities to befall laptops.

If water is the culprit, shut down the machine as soon as possible and let it dry out thoroughly, preferably for 24 hours or more. Sugary or alcoholic beverages are worse: the sugar crystallizes as the liquid dries, forming electrical pathways where none should exist and increasing the risk that running the laptop will fry some components. If your laptop has an unpleasant encounter with an appletini, shut the machine down immediately and take it to the nearest repair shop.

Sudden Impact

Another common laptop mishap is the gravity-accelerated impact event—that is, dropping the thing. Whether it slipped from your hands, slid out of an open bag, or was yanked off of its work surface when someone tripped over a cable, the results can range from cosmetic scuffs to a destroyed hard disk. The big, beautiful screens on today's laptops are particularly vulnerable; the impact from even relatively short falls can crack the screen or damage the cabling connecting it to the main body.

If your laptop should fall, take a deep breath and wait for the initial panicked rush of adrenaline to pass. Then pick up your laptop (and any pieces), turn it on (if it wasn't on to start with), and assess the damage.

First, find out whether the machine works at all. Does it turn on? Does it start but stop sometime during the boot sequence?

Second, if it does rev up, listen to the hard drive. Is it making any unexpected clicks or grinding noises? If so, shut down immediately and don't reboot. The shock from the drop may have damaged a component in the drive, such as the read-write mechanism, in which case restarting the computer could irrevocably destroy your data. Fortunately, PowerBooks introduced last January include a Sudden Motion Sensor, which locks the drive

Care for AppleCare?

Although I'm not a fan of extended warranties, I think all laptop buyers should invest in an AppleCare plan ($249 for an iBook, $349 for a PowerBook; www.apple.com/support/products/).
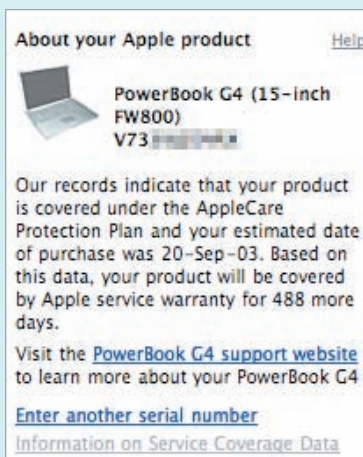
Laptops include smaller, more-delicate parts—nearly every Apple laptop I've owned has gone into the shop at some point for warranty-covered repairs. Unlike desktop machines, which usually stay in one place, a laptop travels with you, so it has innumerable opportunities to be damaged by accident or by simple wear and tear.

But AppleCare primarily covers defects in manufacturing or workmanship, such as hard drives that fail (under normal use) or dead FireWire ports. It specifically excludes accidental damage—or, to be exact, "damage to the Covered Equipment caused by accident, abuse, neglect, misuse (including faulty installation, repair, or maintenance by anyone other than Apple or an Apple Authorized Service Provider), unauthorized modification, extreme environment (including extreme temperature or humidity), extreme physical or electrical stress or interference, fluctuation or surges of electrical power, lightning, static electricity, fire, acts of God, or other external causes."

AppleCare is also limited to hardware: your data is your own responsibility, which is why you should maintain a functioning backup system, especially if you travel often. (Note that if your laptop gets toasted, Apple Geniuses and authorized service providers offer data-recovery services.)

Not sure whether your Mac (or other Apple hardware) is still covered by an AppleCare plan? Go to Apple's support Web site (www.apple.com/support/) and enter your machine's serial number to see when it was purchased, whether it's still covered by AppleCare, and how many days of coverage are left if it is (see "Is It Safe?").

Is It Safe? To check your Mac's AppleCare coverage, enter its serial number at Apple's support site.

About your Apple product   Help

PowerBook G4 (15-inch FW800)
V73

Our records indicate that your product is covered under the AppleCare Protection Plan and your estimated date of purchase was 20-Sep-03. Based on this data, your product will be covered by Apple service warranty for 488 more days.

Visit the PowerBook G4 support website to learn more about your PowerBook G4

Enter another serial number
Information on Service Coverage Data

CHECK IT OUT

Hot Mods

When Steve Jobs introduced the Mac mini at last January's Macworld Conference & Expo, most people thought, "Gee, that'd be easy to fit in the office." But a few thought, "Gee, that'd go great in my car." Because the Mac mini fits into a standard car stereo's head unit, it has inspired a cult of car-computer modders. We highlighted some of the first mini-fied rides in our May issue (macworld.com/0673). But clever DIYers have kept at it. Mike Fielder, of Houston, Texas, for example, did the logical thing and fit a Mac mini into his Mini Cooper (top; macworld.com/0674). Fielder's Mini Cooper sports a 7-inch screen attached to a hinge so he can still access the standard stereo and radio. But the ultimate mini mod comes from Mark Turner, of Atlanta (center; macworld.com/0676). He not only added auxiliary ports and a universal media-card reader to the panel

between the front seats, but also managed to put a brushed-metal power button in the dashboard of the car, just above the glove box (bottom). For more mini mods, check out MacVroom (www.macvroom.com).—CYRUS FARIVAR

tively straightforward with most PowerBooks, it's almost absurdly difficult in iBooks, requiring the disassembly of large sections of the machine. It's also possible to replace a screen yourself—but I, for one, wouldn't feel comfortable trying.

Deciding whether to fix your laptop yourself depends on whether you're OK with waving a screwdriver around miniaturized electronics. Apple's party line is that users can install only RAM and AirPort cards in laptops, and that messing with anything else will void your warranty.

If you're enterprising enough to try other fixes, you can buy many components—including screens and logic boards—from vendors such as PBParts.com and PowerBook Medic.com. The latter sells a line of $10 Take Apart Repair Manuals that will walk you through the process of disassembling and replacing everything from a modem to an LCD. Both vendors will also sell you most of the tools—such as Torx screwdrivers—you'll need. Depending on the part, buying it yourself could save you a few hundred dollars compared with buying from a shop or from Apple.

Leave It to the Pros

If, on the other hand, you feel less than adventurous about doing Mac surgery, you'll need to take your injured machine to an expert—either your nearest Apple Store or an independent, Apple-authorized service provider.

According to Kevin Trivett, the manager of The Mac Store in Seattle, replacing a broken screen costs about $1,400, while logic-board replacements and other internal repairs average $300 to $500. If the problem is covered under AppleCare, the laptop will probably be sent off to Apple to be fixed (see "Care for AppleCare?"). Because AppleCare's terms are pretty specific about the kinds of accident-caused damage the extended warranty will cover, you could still be looking at a bill for whatever fixes are required.

One way to potentially save some money is to purchase the necessary parts elsewhere and bring them to a repair specialist for installation. But be warned: while some stores will do such work for you, they won't guarantee the part. The Mac Store, by contrast, covers any parts that it supplies and installs on out-of-warranty machines for 90 days.

Recovery

It's important to remember that if the unspeakable happens to your beloved portable, you have some options. I hope you'll never have to put this advice to the test. But at least now you know where to turn if your PowerBook or iBook decides that it wants to try to fly. □

heads when it detects rapid movement, thus making this type of damage less likely to occur.

Lastly, look at the screen. Is it cracked or broken? Assuming you can get some kind of on-screen image, is it disrupted by horizontal or vertical lines? Are any of the pixels dark?

While diagnosing the damage yourself is doable—a cracked screen is pretty obvious—misdiagnosis is easy, too. For example, what may appear to be a bad screen could turn out to be a faulty connecting cable. That's why it may be better just to go directly to a repair center, if only to have a technician tell you what's wrong.

Fix It Yourself

Some repairs—replacing RAM, an AirPort card, or the hard drive on some models—you can make yourself. That said, while replacing a hard drive is rela-

MOBILE MAC

Extend Your Wireless Reach

With each step from your home office to your living room, you watch the signal-strength bars on your laptop drop. Then, as you step onto your deck, the signal is abruptly lost altogether. It's the heartbreak of AirPort.

Apple's AirPort technology has range issues. The official specs say it should reach 150 feet when you're sending data at 11 Mbps, and 50 feet at 54 Mbps. But in actual houses, with walls containing metal studs, lath, plaster, and other signal-reducing materials, that range can be dramatically reduced.

Fortunately, there are plenty of ways to extend the range of your AirPort network (or any standard Wi-Fi wireless setup). By adding a new antenna, an additional base station or two, or a HomePlug network adapter to your existing setup, you really can work or surf the Net wherever you want.

But before you buy any of that hardware, you should check first that your existing base station is located in the best place possible. Use your laptop or a handheld Wi-Fi sniffer such as the Marware WiFi Spy (find.macworld.com/0139) to measure signal strength in the spots where you'll need coverage. Then move your base station around to find out where it produces the strongest signals. You'd be surprised how much improvement you can achieve just by moving your base station a couple of feet.

Antenna Upgrades

A better antenna on your base station will receive signals from farther away and throw your data signals around with greater force. Two kinds of antennas are commonly used indoors: omnidirectional or "omni" antennas, which broadcast radio frequencies in all directions, and directional or sectorized antennas, which focus signals on a specific swath of space, such as an arc of 45 degrees.

But there are two problems with upgrading your AirPort base station with a new antenna. First, the Federal Communications Commission (FCC) says it's illegal to add a new antenna that wasn't specifically tested to work with your specific base station. The concern is that untested antennas could drown out neighborhood cordless phones and Wi-Fi networks, and possibly expose users to huge amounts of microwave radiation.

Only two antennas have been approved for use with the AirPort Extreme, and both are from Dr. Bott: the ExtendAir Omni ($100; ●●●●) and the ExtendAir Direct ($150; ●●●●½). When we reviewed these units in our September 2003 issue (find.macworld.com/0140), we found that the Omni increased range by as much as 50 percent in every direction, and the Direct doubled the range within the 70-degree arc that it covered.

The other hitch in adding a new antenna to an AirPort base station is that only two AirPort Extreme models—a modem-jack model and a Power over Ethernet model—have antenna jacks. You can't add antennas to other AirPort models without modifying the case.

Some folks are happy to try just that. Over the years, Constantin von Wentzel has documented warranty-voiding instructions for each AirPort base station model (find.macworld.com/0141). MacWireless.com has less-detailed, downloadable PDFs of the process (find.macworld.com/0142).

What You Need to Know about WDS

Wireless Distribution System (WDS) is a technology for linking up multiple wireless base stations. WDS-enabled base stations can route data among computers connected to different base stations, or route data from the Internet to any base station that's part of a WDS network.

WDS is built into the AirPort Express and the AirPort Extreme but isn't available for the original AirPort Base Stations. It's a feature in other manufacturers' base stations, too, though it's often called "point-to-point" or "point-to-multipoint." Buffalo's WBR2-G54, for example, lets you link as many as six base stations, and it retails for around $70 a pop.

WDS requires that each base station be on the same Wi-Fi channel. Unfortunately, this increases the chance of interference, which can reduce the amount of data you can send among base stations and connected computers. With two base stations, bandwidth could be cut in half; with three, by two-thirds; and so on. If you regularly exchange large files over a network or play demanding network games, you might think about using standard Ethernet instead.

Unfortunately, WDS doesn't seem to work very well among base stations from different makers, even if their underlying chips are the same. For instance, Apple and Buffalo both use chips from Broadcom for their 802.11g base stations, but I've had trouble getting their base stations to interoperate. Depending on the firmware in the base station, your mileage may vary.

Buffalo Technology's WDS-compatible WBR2-G54

Dr. Bott's ExtendAir Omni antenna

Upgrading the antenna is easier on non-Apple base stations. Linksys, Buffalo Technology, and D-Link all sell models with screw-on, removable antennas. HyperLink Technologies (find.macworld.com/0143) offers a wide variety of antennas for these and other vendors' base stations; prices range from $18 to $70.

The FCC recently revised its antenna rules. Starting in July 2004, base-station makers are allowed to test their devices with generic antennas. But until Apple or other makers retest their gear or release new gateways, you'll still be a scofflaw of sorts if you try to add an unauthorized antenna.

Multiple Base Stations

Even if you're willing to pull out a soldering iron or risk the wrath of the FCC, a new antenna may not be the answer. If the walls of your house are too thick or made of the wrong stuff, or if you need to send your signals even farther than an antenna can throw them, you have two other options.

The first is to add more base stations. Designate one base station as the gateway, which connects to your broadband modem. Then add "dumb" base stations—also called repeaters or extenders—which pass along the wireless signals from the main gateway and thus extend its reach.

You can connect such dumb stations in two ways: either through Ethernet or through something called Wireless Distribution System (WDS). WDS is built into the AirPort Extreme, the AirPort Express, and many of the later, 54-Mbps 802.11g Wi-Fi gateways from other manufacturers (see "What You Need to Know about WDS").

Netgear's WGXB102 54 Mbps Wall-Plugged Wireless Range Extender Kit

If you're sticking with Apple base stations, check out Apple's Designing AirPort Extreme Networks guide for details on how to set up multiple base stations (find.macworld.com/0144).

If you're willing to go non-Apple, base stations from Asanté and newer models from Buffalo and Belkin should be compatible with AirPort and AirPort Extreme; they also support AppleTalk for older printers and servers. These third-party base stations usually cost between $50 and $100—they're much cheaper

than the similar AirPort Extreme Base Station, and they provide greater coverage than an AirPort Express.

But note that only the AirPort Express supports AirTunes music streaming from iTunes, and only Apple offers USB printer sharing as a standard feature on all its base stations. And while almost all non-Apple Wi-Fi base stations can be configured with a Web browser, tasks such as upgrading firmware may require a Windows machine or a non-Safari browser.

HomePlug

One problem with the multiple–base-station strategy is that it still depends on wireless signals traveling from station to station. In some houses, that may not work. If that's the case at your house, you could be a good candidate for HomePlug.

The HomePlug standard sends networked data over your home's electrical cables. The speed is limited to just 14 Mbps, but it's a simple way to bypass thick walls or other obstructions that defy wireless signals. Hook up your main base station to a HomePlug adapter, and then install more HomePlug adapters around the house, and you've got an expanded network.

You could install HomePlug adapters in every room where you want to compute, and then connect your laptop or desktop to the nearest adapter using Ethernet cable. But it's better to get a HomePlug adapter with a built-in Wi-Fi base station. Most of these HomePlug base-station adapters use the older, 11-Mbps AirPort or 802.11b standard; Netgear recently introduced an 802.11g option, the WGXB102 54 Mbps Wall-Plugged Wireless Range Extender Kit. For more on HomePlug, see "Get Connected," (July 2004; find.macworld.com/0145).

So which of these range-extending strategies is right for you? Your choice will depend on your tolerance for cost and complexity. Adding a Wi-Fi antenna is probably the cheapest option, but it may require an understanding of radio technology and soldering. Then there's that pesky little problem of its potential illegality. Adding more base stations or installing a HomePlug network is comparatively simple and can offer the greatest coverage, but both options can get expensive quickly.

Nevertheless, with all the money you've already spent on that home network, shouldn't you make sure that it actually networks your entire home? □

GLENN FLEISHMAN edits the daily news blog Wi-Fi Networking News (www.wifinetnews.com) and writes a regular column on the Mac for the *Seattle Times.*

Location, Location, Location

To really take advantage of your laptop's portability, you need network access wherever you go. But to maintain that access when you move from one place to another, you have to change a slew of OS X's settings. Fortunately, OS X lets you save specific combinations of these settings as *network locations.* By setting up locations for all the places and ways you like to compute, you can switch between them effortlessly.

The Basics

Think of a location as the sum of all settings you need to connect to a specific network. This includes the network interface you want to use (Ethernet, AirPort, Bluetooth, FireWire, or modem), as well as the TCP/IP settings, proxies, phone numbers, user names, passwords, and more. Whenever you need to get online in a new location, whether it's at home, the office, or your neighborhood café, OS X's location switching lets you change all those settings at once.

To create a new location, open the Network preference pane and select New Location from the Location menu. (You need to be an administrator to create and edit locations, and you may need to click on the lock icon and enter your password first.)

Enter a name, such as Office Network, for your location, and then click on OK. Next, click on the Configure button at the bottom of the Network pane to configure your location. Enter all the information you need in order to connect to your network—TCP/IP settings, AirPort settings (such as the name of a specific network to connect to) if necessary, and so forth—and then click on the Apply Now button. Your settings and location will be saved, and your Mac will change to the new location.

Alternatively, you can use the Network Setup Assistant to create a location. Click on the Assist Me button at the bottom of the Network preference pane, and the assistant will walk you through the process, asking questions and offering check boxes and fields where you select and enter settings.

You can also base a new location on an existing one. Say you already have an Office Network location that you use to connect to the network at work via AirPort. Now you want to create a new one that connects to that same network via Ethernet instead. You can create a copy of the first location by selecting Edit Locations from the Location menu, picking the location you want to clone, and then clicking on Duplicate. You can then rename this location (Office Ethernet, say) and adjust the settings you want to change.

What Locations Can Do

When do you need a new location? You can create as many as you need for all the different places where you get network access, for connecting to different AirPort networks, or for using different network interfaces. For example:
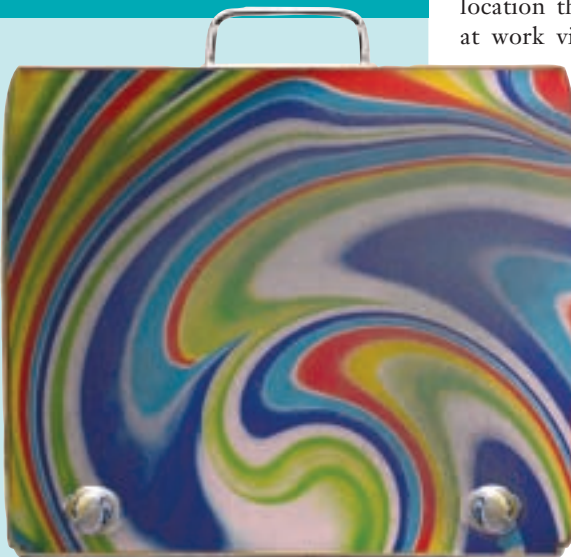
> If you use one AirPort network at home and another at the office, then create two separate AirPort locations for each network, as well as a third that

looks for any available AirPort network, such as one in a café or another public space.

> If you sometimes connect directly through a cable or DSL modem and sometimes through a network hub or router, then create separate locations for each.

> If you need to transfer large files from your portable to a desktop computer, then a location that connects to your home or office system via a direct Ethernet connection (or even via FireWire) will provide faster throughput.

> You can even create a location that turns off all your network interfaces. This allows you to work offline and be sure that none of your applications try to connect to the Internet—and that no one can connect to you. Such a location is good when you're really trying to save your laptop's batteries: even if you're not connected to a network, AirPort will still use up some of your precious power if it's on, thus shortening your battery life.

Easy Ways to Switch
Once you've set up your locations, you have several ways to switch from one to another.

The simplest way is to go to the Apple Menu, select Location, and then choose a location from the submenu.

Command-line mavens have another option: using Terminal to see the current and other locations. (This is especially useful if you need to make a login change to a remote Mac that's running as a server.) From the Terminal command prompt, type `scselect`. This will return a list of all the available locations, with an asterisk in front of the presently active one.

```
$ scselect
Defined sets include: (* == current set)
   3    (Ethernet)
   5     (Modem)
   4    (Office AirPort)
   2     (Home network)
   0    (Automatic)
 * 1    (Airport)
```

To change locations, run the `scselect` command with the number listed before the location: for example, in the above configuration, you could switch to Ethernet by running `scselect 3`.

If you use Objective Development's LaunchBar (www.obdev.at), the keyboard-friendly launcher, you can change locations with just a few keystrokes: press 1-space, type the first few letters of the location you want to activate, select it from LaunchBar's list, and press enter. Or if you use Startly Technologies' QuicKeys (www.cesoft.com), you can create a macro to change locations with a single key combination.

The X Factor
But if you really want full control over your locations and the ability to change more than just
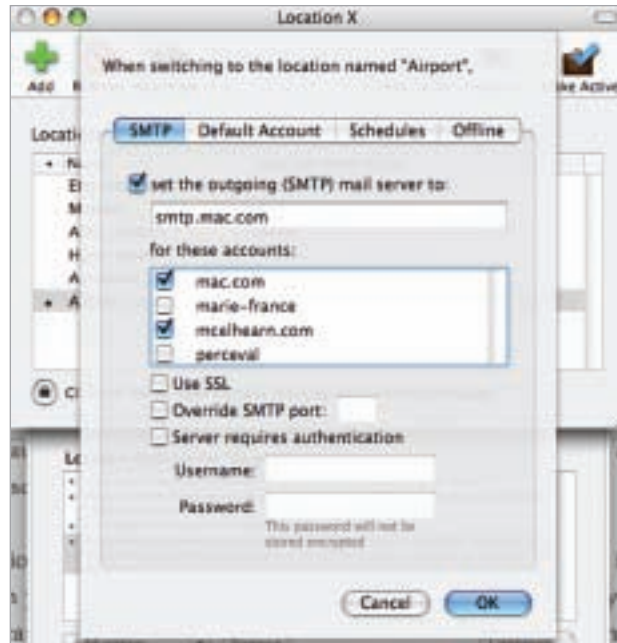
Drop-Down Drawers Location X's drawers let you see which location settings you can adjust and what your options are for adjusting them.

network settings (or if you're nostalgic for the powerful Location feature in OS 9), you'll want to check out Alex Keresztes and Greg Novick's Location X (find.macworld.com/0225). This $20 program lets you set up locations that include your network settings, as well as settings for Apple Mail or Microsoft Entourage, a default printer, a time zone, Energy Saver preferences, and QuickTime.

Location X's control over these additional settings is a real time-saver: when you go from home to the office, for example, you don't use the same printer or mail server; you may need to switch the home page in your browser. Location X can do all this, as well as run shell scripts or AppleScripts when you change locations.

Working with Location X is simple. The program displays all available locations in its top pane. When you select one of these locations, a bottom drawer allows you to configure it. This drawer shows which options have been set, and a pop-up menu lets you reconfigure them as you like (see "Drop-Down Drawers"). Selecting an option lets you see which changes are available.

You can add, remove, and change locations from within Location X. While you can use the Apple menu or other means to change locations, doing so changes only your network settings. If you want to change the additional options, you'll have to use Location X. □

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MOBILE MAC

Fix AirPort Printing Problems

Sharing a printer among multiple computers over an AirPort network—by connecting the printer to the USB port on an AirPort Extreme or Express base station—usually just works. But according to online reports and reader mail, it doesn't work all the time. Here are five basic troubleshooting steps to take if your shared printer stops printing.

Step 1: Get the Correct Driver

First, download and install the latest drivers for your printer from the manufacturer's Web site. Even when AirPort is set up correctly and your printer is compatible with it, you still might have problems: the print queue in Printer Setup Utility stops processing jobs, or a print job vanishes or doesn't complete. These problems—particularly when they happen on long, complex print jobs—may indicate a driver problem. A new driver could be all you need to fix it.

If the manufacturer's driver doesn't work, try the Gimp-Print drivers (macworld.com/0501), which work with OS X's Unix underpinnings. Another option is the Hewlett-Packard Inkjet Driver Project (HPIJS) driver package for Mac OS X (macworld.com/0502). HPIJS originally supported only HP ink-jet printers, but it has grown to include drivers for printers from manufacturers such as Brother, Canon, Epson, and Samsung.

To use one of these alternative drivers, select your printer in Printer Setup Utility and click on Show Info in the toolbar. Choose Printer Model in the upper pop-up menu, and then select the printer's manufacturer in the lower pop-up menu. A list of printer drivers appears below the lower pop-up; the list is formatted with the name of the printer followed

Switching Drivers Having trouble printing to your printer via AirPort? Your printer driver could be to blame. You can download third-party drivers—such as the Gimp-Print drivers, which work directly with OS X's CUPS printing subsystem.
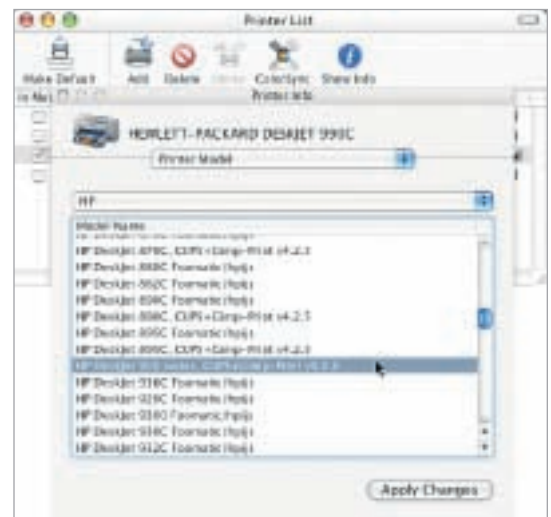
by the source of the printer driver. For example, if your printer is an HP Deskjet 990Cxi, you should see HP Deskjet 900 Series, CUPS+Gimp-Print v4.2.5 as an option (see "Switching Drivers").

Step 2: Check AirPort Compatibility

Apple's Remote I/O USB Printer protocol allows a USB printer driver to work across a TCP network connection—in other words, to do something it wasn't designed to do, so problems sometimes crop up.

Apple used to provide a list of AirPort-compatible printers, but now only a list of OS X–compatible printers is available (macworld.com/0566). Hewlett-Packard (macworld.com/0498) and Lexmark (macworld.com/0499) publish compatibility lists on their Web sites, but neither list is comprehensive.

To fill that void, James Clay—known as "iFelix" on Apple's discussion forums—maintains an unofficial printer-compatibility list on his Web site (macworld.com/0500). He started with Apple's original list and bases updates on his own testing and other users'

AirPort Does Windows

AirPort printer sharing isn't restricted to Macs: Windows PCs can also use an AirPort print server. To set this up, you'll need the AirPort's IP number. (By default, it's at 10.0.1.1.) With the PC attached to the AirPort wireless network, open the Add Printer wizard in Printers and Faxes. Following the steps in the wizard, create a local printer, deselecting the Automatically Configure option. Next, click to create a new Standard TCP/IP Port, and enter your AirPort's IP number in the IP number field. If the IP number is 10.0.1.1, the queue name should automatically fill in as IP_10.0.1.1. In the next screen, select Standard as the device type, and then specify Hewlett Packard Jet Direct. Finally, click on Finish, and then select your printer make and model from the list of available drivers.

If you're using Windows XP, 2000, or 2003, there's a simpler solution: Apple's Bonjour for Windows (macworld.com/0505). Once installed, the included Printer Wizard displays a list of available printers on your subnet; just select your AirPort-shared printer, click on OK, and select the printer make and model from the list.

reports. When shopping for a printer, check these compatibility lists; if a printer isn't listed, a bit more detective work is in order.

Another way to tell whether your printer should work with AirPort is to look at its marketing materials. Do they say the printer can be networked? If so, it will probably work with AirPort. If the manufacturer specifically says it can be used with a print server, the odds are even better. If the manufacturer sells a print server for the printer, it's almost a sure bet. If networking or print servers aren't mentioned, the printer could well be a host-based model and therefore less likely to work with AirPort (see "Printer + Print Server = Network Printer").

Also, remember that AirPort supports only printing. If you have a multifunction device, you won't be able to use its additional features (scanner, fax, and so on) over the network. Some manufacturers sell print servers that support those extras.

Step 3: Make Sure AirPort Is Set Up Correctly
Unplug the printer from your base station; then download and install the latest AirPort Admin Utility from Apple's support Web site (www.apple.com/support/airport). In addition to the utility itself, the download should include the latest firmware released for your particular base station.

After the base station restarts, establish connectivity between the outside world and all your computers. Once your wireless network works, plug your printer back into the base station. On your Mac, open Printer Setup Utility, click on the Add button, and select Rendezvous (or Bonjour, if you've upgraded to Tiger) from the Printer Type drop-down menu. You should see your printer listed (see "Are You There?"). Add the printer and run a test print job. If your job prints, you're done; if some jobs print but others don't, there may be a driver problem (see the first step).

Step 4: Test the Printer
Plug the printer directly into your Mac's USB port. Open Printer Setup Utility, select USB from the top drop-down menu, pick your printer from the resulting list, and click on Add. Run another test print job. If it doesn't work, try reinstalling the driver that came with your printer, and test again. If that doesn't help, there may be a problem with your printer—contact the manufacturer or consult its Web site for support.

Step 5: Sweating the Small Stuff
If you're still having difficulties, remember to check the basics: Is everything plugged in and turned on? If you use a laptop with multiple network locations, have you selected the correct location? If

Printer + Print Server = Network Printer

Some printers are meant to be shared; some aren't. Network-ready printers can process print jobs on their own. Such printers also typically hold plenty of paper, ink, and toner. Models that aren't meant to be shared are called host-based printers, meaning that they rely on the attached computer to figure out where to put the ink on the paper.

Host-based printers are also not designed to work with print servers—devices that attach to a printer's USB or parallel port and make the printer available on a network. The AirPort base station is a very capable print server, too, although it can't queue jobs internally. (Networking aficionados will be pleased to note that AirPort uses the familiar AppSocket [or JetDirect] protocol on TCP port 9100.)

AirPort is unique among print servers in that it doesn't care whether the attached printer is host-based or network-ready. Apple's Remote I/O USB Printing protocol simply extends the USB data stream over the network. But network traffic tends to flow in bursts, not the steady and predictable stream of a USB connection. Therefore, if the printer's hardware isn't capable of queuing and buffering incoming data, it may be unreliable when used in a network setting.

Note that when you use a print server, you lose access to whatever utilities your printer has for monitoring its ink supply, paper jams, and the like. These utilities require a direct USB connection and don't work over network connections. Such limitations are part and parcel of network printing, and are true of any print server.

the problem seems to be triggered by a particular print job, try another print driver. If you can resolve a problem by reseating the USB cable, try another cable. If the Mac has trouble sending the print job to the printer, find out whether someone on the network is chewing up the wireless bandwidth.

Apple's discussion boards for AirPort-connected printers (macworld.com/0503) have a lot of helpful information. In addition to keeping his compatibility list, James "iFelix" Clay is a regular figure there and a respected authority within the user community.

Ready, Aim, Troubleshoot
Although AirPort does make sharing a USB printer easier—most of the time—networking is never simple, even when Apple does it. But when you run into a glitch with AirPort printer sharing, you don't need a computer-science degree to fix the problem. Systematic troubleshooting should, in almost all cases, do the trick. □

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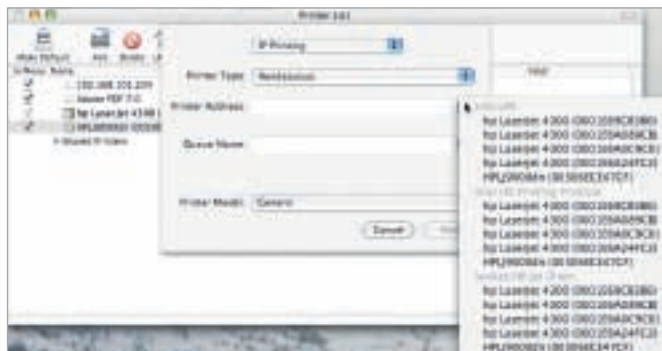
Are You There? An important step when you're troubleshooting AirPort printing problems is to unplug the printer and make sure AirPort is running with the latest firmware. Then plug the printer in and see if you can find it.

Laptop Battery Smarts

According to Apple, a 15-inch aluminum PowerBook G4 will operate for nearly four and a half hours before putting itself to sleep. But that's like saying that a four-person tent can hold four people—it's technically possible but not usually realistic. I'll show you how to get the most life and performance out of your PowerBook or iBook battery, so you won't be stuck without juice when you really need it.

Care and Feeding of a Healthy Battery
No rechargeable batteries last forever. In fact, the lithium-ion batteries in today's iBooks and Power-Books begin to degrade as soon as they're shipped from the factory.
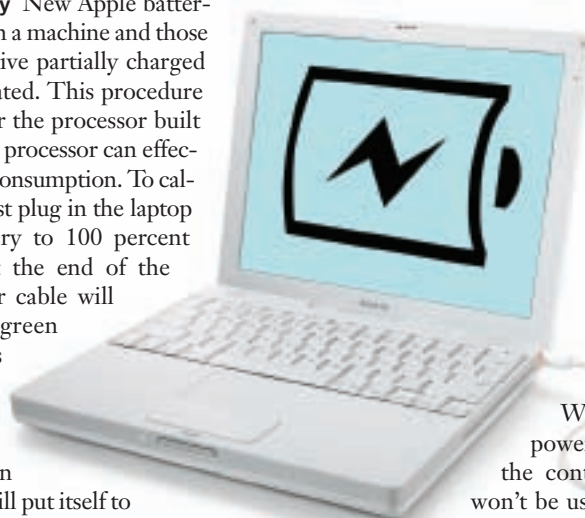
Calibrate the Battery New Apple batteries, those included with a machine and those bought separately, arrive partially charged and need to be calibrated. This procedure provides a baseline for the processor built into the battery, so the processor can effectively regulate power consumption. To calibrate your battery, first plug in the laptop and charge the battery to 100 percent capacity; the light at the end of the Apple-supplied power cable will go from orange to green when the battery is fully charged. Next, unplug the power adapter and let the battery run down. The machine will put itself to sleep and refuse to wake up. Plug the adapter in again and fully recharge the battery. (You can use the laptop as you normally would during the calibration process.) You need to calibrate the battery only once.

Work Smart It's nice to have desktop power on your lap, but do you need to use all that power all the time?

When your laptop is running on battery power, use the Energy Saver preference pane to minimize performance and maximize battery life. From the Optimize Energy Settings pop-up menu, choose Longest Battery Life, which puts the hard disk to sleep when possible and reduces the processor's performance.

Also, use the laptop's brightness-control keys (usually F1 and F2, depending on the model) to dim the screen's backlight. And if you don't need AirPort and Bluetooth, turn them off; even if no other devices are nearby, the wireless radios in the laptop continually scan for networks.

Store the Battery Properly When it's asleep, a laptop steals power from its battery to maintain the contents of its memory. If you won't be using the computer for several days, putting it to sleep could drain the battery. Instead, charge the battery to about 40 or 50 percent capacity and shut the computer down. If you need to store a battery for six months or more, remove it from the machine and keep it in a place that won't get too hot or too cold (between 50 and 90 degrees Fahrenheit).

Stay in Charge
How you charge the battery is just as important as how you discharge it. Current iBooks and PowerBooks ship with a 65-watt AC adapter that powers the machine and recharges the battery. If you've moved up from an iBook (dual USB) or a Titanium PowerBook G4, you can use the older machine's 45-watt adapter as an extra charger for the new Macs, but Apple doesn't recommend it: that wattage is enough to keep you working but not enough to charge the battery at the same time.

Of course, you don't have to use Apple's chargers. The iAdapter2, sold by Lind Electronics ($70; www

iPod Battery Booster

Is your iPod's battery on the fritz? Does it tire out just when you've started to rock? It may be time for a new battery. For $99 (plus shipping), Apple will replace the battery in an out-of-warranty iPod. But you can do it yourself for considerably less—and we'll show you how. Go to find.macworld .com/0097 and download our step-by-step guide to replacing the battery in a first-, second-, or third-generation iPod.

.lindelectronics.com), is lighter and more compact than Apple's little white bricks. Madsonline sells the diminutive, 45-watt MicroAdapter ($78; www.madsonline.com) for previous-generation iBooks and PowerBooks. Kensington's Universal Laptop Power Supply ($120; www.kensington.com) can deliver 90 watts of power and is smart enough to judge how much wattage your laptop can safely handle. It includes a car adapter for charging on the road, and it features several plug tips that allow the power supply to work with other laptop models.

Don't Use Just the AC Adapter If you always plug your laptop into the wall while you work, the battery doesn't discharge; its electrons stagnate, and the battery's life span is reduced. Even if you usually use an AC adapter, make a point of working from the battery once a month and then recharging.

Recharge Smart Nickel-cadmium batteries suffered from the "memory effect"—if you didn't fully discharge a nickel-cadmium battery occasionally, some of its capacity would become unusable until you ran the battery to zero and charged it up again. Although lithium-ion batteries don't suffer from the memory effect, they do need to have their electrons jostled occasionally to prevent premature decay. Try to complete a full charge-and-discharge cycle at least once per month. According to Apple, a lithium-ion battery should retain 80 percent of its original capacity after 300 full charge-and-discharge cycles.

Is It Time for a New Battery?

At some point, even smart power management can't overcome the physics of an aging battery. When testing batteries for this article, I found a great example of battery neglect: an iBook that I'd been using as a music server had remained plugged in at the same location for a couple of years. Its lithium-ion battery registered an embarrassing 1 hour and 21 minutes of life with the Energy Saver options set to Longest Battery Life. A replacement battery from BTI (www.batterytech.com) clocked in with a more respectable 3 hours and 57 minutes (see "Stamina Testing").

It's useful to measure your battery's capacity over time. To determine a battery's capacity, use a utility such as Jeremy Kezer's XBattery ($15; www.kezer.net) or Rayner Software's iBatt ($15; www.raynersoftware.com). iBatt compares your battery's capacity with a median of other iBatt users' batteries, and it helps determine whether you need a replacement. If the battery provides less than 50 percent of its original capacity and you're still covered by the laptop's one-year warranty (or Apple Care's three-year warranty), Apple will replace the battery at no cost.

STAMINA TESTING

COMPUTER	BATTERY MODEL	BATTERY LIFE IN STANDARD MODE[A] (HOURS: MINUTES)	
Apple iBook G3/600MHz (dual USB)	original factory-supplied battery		1:21
	replacement battery from BTI		3:57
Apple Aluminum PowerBook G4/1GHz	original factory-supplied battery		1:48
	replacement battery from Apple		2:17
Apple Titanium Power-Book G4/400MHz	original factory-supplied battery		3:37
	replacement high-capacity battery from NewerTechnology		4:05
		>**Better**	

[A]Standard mode: Screen Brightness set to 75 percent; Processor Performance set to Automatic; Energy Saver set to Longest Battery Life.

If you're using a much older model, such as a Power-Book 1400cs, your only option is to turn to a third-party battery vendor such as BTI or Lind Electronics since Apple no longer sells batteries for older models. Nearly all battery and computer vendors sell replacement batteries for current models. To be competitive, some companies offer higher-capacity batteries that benefit from improvements in battery technology since the original models were introduced.

For more backup battery power, look into buying an external battery such as the Valence N-Charge ($300; www.valence.com)—when fully powered, it acts as a self-contained AC adapter that keeps your internal battery charged for up to ten hours. (But remember, that's the manufacturer's best-case scenario.) For some frequent travelers, this type of device my be preferable to juggling multiple battery packs, though it adds about three pounds to your bag.

BATTERY RECALL

Do you own a 15-inch aluminum PowerBook G4? If so, you may qualify for a new battery. In August, Apple announced that it was recalling specific batteries that it sold from January 2004 through August 2004. For more details, go to find.macworld.com/0076.

And remember that when you buy a new battery, you must get rid of the old battery properly. Organizations such as the Rechargeable Battery Recycling Corporation (www.rbrc.org) ensure that the batteries' dangerous components are safely recycled and disposed of.

Power On

Taking care of your laptop isn't too difficult: don't drop it, throw it, submerge it, or set it on fire. Taking care of the battery is a bit more complicated. But by managing your power—calibrating the battery when you first get it, charging and discharging it to prevent premature decay, and extending your portable capabilities with extra batteries and chargers—you can get much more out of your iBook or PowerBook. □

JEFF CARLSON is the managing editor of the free weekly Macintosh newsletter TidBits (www.tidbits.com). Having owned seven Apple laptops, he knows a thing or two about battery life.

Macs Abroad

Taking your technology on the road is hard enough. So you might think that taking it overseas is even harder. But it doesn't have to be. With a little bit of preparation, going online in Kuala Lumpur can be just about as easy as doing so in Des Moines.

Pick Your Pack

Unless you consider Hawaiian shirts and fluorescent fanny packs travel necessities, think twice before taking your fanciest laptop bag overseas. That svelte leather satchel with perfect PowerBook-size proportions screams "Tourist!" in some parts of the world, making you a target for pickpockets and petty thieves.

Discreet neoprene sleeves, such as WaterField Designs' Sleevecases (prices start at $38; macworld .com/0564), are great alternatives. They let you slip your PowerBook or iBook into a less conspicuous container, such as a backpack or a messenger bag, while still giving your laptop the protection it requires.

And don't forget to pack your iPod. You can copy and paste your itinerary and sightseeing notes into its Notes folder, and it can serve as your backup drive.

Foreign Powers

You know that many countries don't use the same electric current as the United States. That's why it's so handy that Apple's entire portable line is dual-voltage–ready: the square AC adapter that ships with every iBook, PowerBook, and iPod can handle the 220-volt electricity used in Europe and Asia, as well as the 110-volt current found in North America. So all you need to pack is an inexpensive adapter to plug into oddly shaped electrical sockets.

Adapter plugs cost a few dollars each, and you can purchase them at your local luggage shop. For a particularly stylish set, check out Apple's World Travel Adapter Kit ($39; store.apple.com). It includes six different AC adapters, with blades and plugs for every continent. The glossy white adapters click right into the power brick. Unfortunately, this prevents you from using the AC adapter's longer power cord—a pity, because convenient power outlets can be hard to come by in less-developed locales.

Not every vendor is as worldly as Apple. If you're packing a digital camera, a PDA, or a camcorder, look for a sticker reading "Input: AC 110-240 volts" before you plug it in.

Foreign Phones

If you plan to use a dial-up connection to check your e-mail messages from a hotel, pack a long phone cord. RJ-11 phone connectors are increasingly the norm in modern buildings and urban hotels worldwide.

Travelers who veer off the beaten path or beyond business-class accommodations might come across funky-looking phone jacks. For these, you'll need another small plug adapter. The thrifty solution is to borrow parts from other telecom equipment wherever you are. Look closely at phones and other telecommunications devices. Many have plug adapters with North American–style plugs on one end; you can simply borrow the adapter for the duration of your online session.

If that approach is too haphazard for you, visit a travel outfitter's Web site before your trip. At BuyTravelConverter.com, for example, you'll find a panoply of phone plugs and power adapters, and its product listings are organized by country.

Note that the digital phone systems in some hotels and offices rely on high-voltage PBX lines, which will sizzle your notebook's modem. Digital line testers such as Magellan's TeleTester Pro ($25; macworld.com/0565) will quickly assess the condition of the line.

Under Warranty Overseas

Fortunately, the warranty on Apple's portables is valid worldwide and includes global repair coverage. Carrying a copy of your AppleCare papers will minimize any fuss if you demand walk-in service from one of Apple's international dealers, and carrying some proof of purchase couldn't hurt.


Preflight Downloads

Before you walk out the door, download and test-drive these shareware utilities built for globe-trotters.

Traveler's Clock ($5; www.xmission.com/~illume/): Illume Software's clock screen saver is designed for hotel sleepers. It displays a large, low-light clock that's visible from across a room, it includes a white-noise generator that masks the sounds of nearby ice machines and traffic, and it lets you choose your favorite tune as a rockin' wake-up call.

Time Palette ($30; www.timepalette.com): Xeric Design's global time tool will save you from ever having to yell "What time is it there?" on a long-distance call. Along with shaded day-and-night maps and a sunrise-sunset almanac, Time Palette's database stores the legislative oddities of many countries' differing rules for daylight saving time.

Don't Wait Your modem thinks all dial tones sound like the one in the United States, but that's not the case. To prevent confusion, tell it not to wait for a dial tone before trying to establish a dial-up connection overseas.
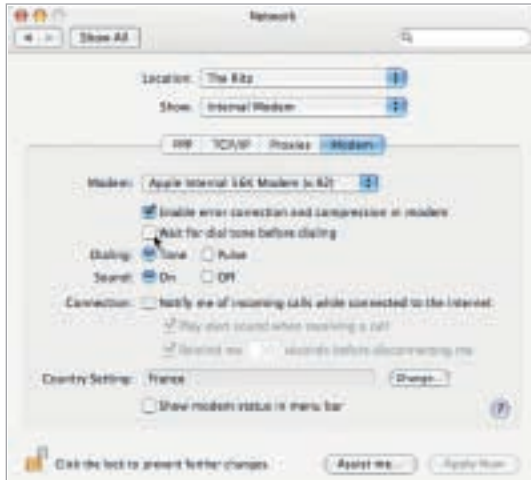
If you're going abroad for a while, bring CD copies of your system software and mission-critical apps (and their registration numbers). Having these on hand will save you days of headache if you need to reinstall software in the field. (If you buy software overseas, you risk all sorts of support, language, and upgrade-licensing issues after you've returned home.)

Keep in Touch

Once you've reached your destination, you've got a number of options for getting connected: Internet cafés, Wi-Fi hotspots, hotel broadband connections, and dial-up connections.

Café Society Internet cafés have followed tourists to every corner of the earth. Whether you're weaving through the streets of Saigon or strolling down the Champs-Élysées, odds are you'll find Internet access right around the corner. (If in doubt, ask a local teenager for directions.)

While some Internet cafés let you plug in your own Mac, you'll usually have to use their computers. To send e-mail messages from a public computer, you'll need to remember the URL for your provider's Web-mail service (if you're a .Mac customer, for example, it's webmail.mac.com). Be prepared to hunt and peck, since keyboards can be very different in some countries.

Wi-Fi hotspots have the advantage of letting you use your own Mac (see "How to Use Hotspots," macworld .com/0607). U.S.-based commercial hotspot services including T-Mobile HotSpot and Boingo are expanding into Europe and Asia, usually in familiar places such as Starbucks outlets. Before you leave, you can set up a time-limited account with one of these services—but check its Web site first to make sure it has locations where you're headed.

In-Room Internet Chain hotels have jumped on the high-speed bandwagon, usually charging a flat rate for a full day of in-room Ethernet access. Prices vary, but if the continental breakfast costs $40, the DSL probably won't be a bargain either. Hotel DSL also brings its own minor annoyances, particularly when it comes to connecting to SMTP mail servers. (See "Hit the Road, Mac," macworld.com/0608, for tips on using hotel broadband.)

By combining hotel DSL with a voice-over-IP phone service such as Skype, you can surf the Net *and* gab away for hours on end for one flat rate. If you're a budget traveler, you'll find some great offerings—including complimentary Wi-Fi—in Europe's very competitive hostels.

There's Always Dial-Up While it may sound passé, you can always fall back on a dial-up connection. If you have an Internet account back home, you might be surprised to discover that your big-name ISP has local access numbers almost anywhere you may wander.

EarthLink, for example, offers international roaming, to both its dial-up and its broadband users, in more than 70 countries. Customers must enable the service by signing in (at myaccount.earthlink.net) and going to Service Details: Optional Service. For instance, in Italy, EarthLink provides more than 650 local dial-up numbers. When you use one of these international numbers, you'll be billed an access fee of 15 cents per minute.

But don't forget that you'll also have to pay phone charges for your dial-up sessions. Hotels usually charge inflated prices for any phone service, even local calls. Hitting the minibar is probably cheap by comparison.

One final tip: The pitch of the dial tone varies from country to country. (In Italy, it wavers like a busy signal; in Japan, the volume is quite soft.) For that reason, you should disable the Wait For Dial Tone Before Dialing option (in the Network preference pane's Modem tab).

It's a Mac World, After All

Even though it requires a bit more preparation than traveling inside the United States, taking your high-tech gear overseas is much easier than it used to be. Thanks to the worldwide spread of Internet cafés and hotel broadband, and Apple's travel-friendly design, you can feel right at home wherever you go. □

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Calling Overseas If you don't want to pay for hotel broadband services, consider dial-up. Major ISPs such as EarthLink offer dial-up access—Italy alone has hundreds of local-access numbers—for a nominal fee. Just watch out for hotel phone charges.